MATHEMATICS CROSSWALK
2008 DRAFT MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 3

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL				
Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	1	Express whole numbers through six digits using models, pictures, symbols, spoken and written words, and/or expanded notation.	1	Read whole numbers in contextual situations (through six-digit numbers).
			2	Identify six-digit whole numbers in or out of order.
			3	Write whole numbers through six-digits in or out of order.
			4	State whole numbers, through six-digits, with correct place value, by using models, illustrations, symbols, or expanded notation (e.g., 53,941 = 50,000 + 3,000 + 900 + 40 +1).
			5	Construct models to represent place value concepts for the one's, ten's, and hundred's places.
			6	Apply expanded notation to model place value through 9,999 (e.g., 5,378 = 5,000 + 300 + 70 + 8).
	2	Compare and order three or more whole numbers through six digits by applying the concept of place value using symbols (<, >, =, ≠).	8	Compare two whole numbers, through six-digits.
			9	Order three or more whole numbers through six-digit numbers (least to greatest, or greatest to least).

* This performance objective is new to the 2008 Draft Mathematics Standard Articulated by Grade Level.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	3	Identify the place value and actual value of digits for whole numbers up to six digits.	4	State whole numbers, through six-digits, with correct place value, by using models, illustrations, symbols, or expanded notation (e.g., 53,941 = 50,000 + 3,000 + 900 + 40 +1).
	4	Sort numbers into sets and justify the sort.	7	Sort whole numbers into sets containing only odd numbers or only even numbers.
	5	Count and represent money using coins and bills up to $20.00.	15	Count amounts of money through $20.00 using pictures or actual bills and coins
	6	Describe benchmark fractions as: • fair sharing parts of whole, • parts of a set, and • as locations on a number line.	10	Make models that represent proper fractions (halves, thirds, fourths, eighths, and tenths).
			11	Identify symbols, words, or models that represent proper fractions (halves, thirds, fourths, eighths and tenths).
	7	Express benchmark fractions using models, symbols, and written and spoken words in and out of context.	10	Make models that represent proper fractions (halves, thirds, fourths, eighths, and tenths).
			11	Identify symbols, words, or models that represent proper fractions (halves, thirds, fourths, eighths and tenths).
			12	Use proper fractions in contextual situations.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	8	Compare and order (<, >, =, ≠) benchmark fractions with like denominators.	13	Compare two proper fractions with like denominators.
			14	Order three or more proper fractions with like denominators (halves, thirds, fourths, eighths, and tenths).
	M03-S1C2-01	**Moved to Strand 1 Concept 2**	16	Use decimals through hundredths in contextual situations.
		REMOVED	17	Compare two decimals, through hundredths, using models, illustrations, or symbols.
		REMOVED	18	Order three or more decimals, through hundredths, using models, illustrations, or symbols.
		REMOVED	19	Determine the equivalency among decimals, fractions, and percents (e.g., half-dollar = 50¢ = 50% and 1/4 = 0.25 = 25%).
		REMOVED	20	Identify whole-number factors and/or pairs of factors for a given whole number through 24.
		REMOVED	21	Determine multiples of a given whole number with products through 24 (skip counting).

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations	1	Add and subtract whole numbers to at least four digits, money to $20.00, and fractions with like denominators accurately, efficiently, and flexibly in contextual and non-contextual situations.	2	Add two three-digit whole numbers.
			3	Subtract two three-digit whole numbers.
			4	Add a column of numbers.
			5	Select the grade-level appropriate operation to solve word problems.
			6	Solve word problems using grade-level appropriate operations and numbers.
			17	Apply addition and subtraction in contextual situations, through $20.00.
			S1C1-16	Use decimals through hundredths in contextual situations.
	2	Demonstrate the process of multiplication and division using multiple models.	7	Demonstrate the process of multiplication as repeatedly adding the same number, counting by multiples, combining equal sets, and making arrays.
			8	Demonstrate the process of division with one-digit divisors (separating elements of a set into smaller equal sets, sharing equally, or repeatedly subtracting the same number).

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations	3	Use multiple strategies to develop fluency with multiplication and division through 10s in contextual and non-contextual situations.	7	Demonstrate the process of multiplication as repeatedly adding the same number, counting by multiples, combining equal sets, and making arrays.
			8	Demonstrate the process of division with one-digit divisors (separating elements of a set into smaller equal sets, sharing equally, or repeatedly subtracting the same number).
			10	State multiplication and division facts through 9s.
	4	Apply commutative and identity properties to multiplication and division.	11	Demonstrate the commutative and identity properties of multiplication.
			12	Identify multiplication and division as inverse operations.
			13	Apply grade-level appropriate properties to assist in computation.
	5	Apply the concept of multiplication and division as inverse operations to solve problems (fact families).	9	Demonstrate families of equations for multiplication and division through 9s.
		REMOVED	1	Demonstrate the process of subtraction using manipulatives through three-digit whole numbers.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations		**REMOVED**	14	Apply the symbols: ×, ÷, /, ∗, %, and the grouping symbols ( ) and ",".
		REMOVED	15	Use grade-level appropriate mathematical terminology.
		REMOVED	16	Add or subtract fractions with like denominators (halves, thirds, fourths, eighths, and tenths) appropriate to grade level.
3. Estimation	1	Use zero, half, and whole as benchmarks for estimating fractions.*		
	2	Make estimates appropriate to a given situation with whole numbers by: • knowing when to estimate, • selecting an appropriate method of estimation, and • determining the reasonableness of an estimate.	1	Solve grade-level appropriate problems using estimation.
			5	Evaluate the reasonableness of estimated measures.
	M03-S4C4-01	**Moved to Strand 4 Concept 4**	2	Estimate length and weight using U.S. customary units.
	M03-S4C4-01	**Moved to Strand 4 Concept 4**	3	Record estimated and actual linear measurements for real-life objects (e.g., length of fingernail; height of desk).

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
3. Estimation	M03-S4C4-01	**Moved to Strand 4 Concept 4**	4	Compare estimations of appropriate measures to the actual measures.

Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Data Analysis (Statistics)	1	Collect, generate, organize, and display data in contextual situations using: • horizontal and vertical single bar graphs, • line plots, and • frequency tables.	2	Construct a horizontal bar, vertical bar, pictograph, or tally chart with appropriate labels and title from organized data.
	2	Analyze displays of data; formulate questions based on displays of data.	3	Interpret data found in line plots, pictographs, and single-bar graphs (horizontal and vertical).
			4	Answer questions based on data found in line plots, pictographs, and single-bar graphs (horizontal and vertical).
			5	Formulate questions based on graphs, charts, and tables to solve problems.
			6	Solve problems using graphs, charts and tables.

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Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Data Analysis (Statistics)		**REMOVED**	1	Formulate questions to collect data in contextual situations.
2. Probability	1	Describe elements of theoretical probability: • name or draw all possible outcomes and • predict the outcome using "likely," "unlikely," "certain," or "impossible."	1	Name the possible outcomes for a probability experiment.
			2	Make predictions about the probability of events being more likely, less likely, equally likely or unlikely.
	2	Demonstrate elements of experimental probability: • predict specific outcomes based on manipulatives used with the experiment, • perform experiment, • record data, • compare the outcome to the prediction, and • compare the results of multiple repetitions.	3	Predict the outcome of a grade-level appropriate probability experiment.
			4	Record the data from performing a grade-level appropriate probability experiment.
			5	Compare the outcome of an experiment to predictions made prior to performing the experiment.
			6	Compare the results of two repetitions of the same grade-level appropriate probability experiment.

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Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
3. Discrete Mathematics – Systematic Listing and Counting	1	Solve a variety of problems based on the multiplication principle of counting.*		
	2	Represent all possibilities for a variety of counting problems using arrays, charts, and systematic lists; draw conclusions from these representations.*		
		REMOVED	1	Make a diagram to represent the number of combinations available when 1 item is selected from each of 3 sets of 2 items (e.g., 2 different shirts, 2 different hats, 2 different belts).
4. Discrete Mathematics – Vertex-Edge Graphs	1	Color the regions of maps and color the vertices of a vertex-edge graph using the fewest number of colors as an introduction to the general problem of avoiding conflicts.*	1	Color maps with the least number of colors so that no common edges share the same color (increased complexity throughout grade levels).
	2	Investigate simple properties of vertex-edge graphs: • circuits in a graph, • weights on edges, and • shortest path between two vertices.*		

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Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Patterns	1	Recognize, analyze, extend, and create or find missing terms in sequential numerical patterns and geometric patterns.	2	Extend a grade-level appropriate repetitive pattern (e.g., 5, 10, 15, 20, . . . rule: add five or count by five's.
			3	Solve grade-level appropriate pattern problems.
	2	Explain the rule for a given numerical or symbolic pattern.	1	Communicate a grade-level appropriate iterative pattern, using symbols or numbers.
2. Functions and Relationships	1	Describe, extend, or find the missing term(s) in a given function or rule with addition, subtraction, multiplication, or division.*		
	2	Describe a rule that represents the relationship between two given sets of data which are on a table, model, input/output machine, etc.	**1**	Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model, and frames and arrows).
3. Algebraic Representations	1	Record equivalent forms of whole numbers up to six digits by constructing models.*		
	2	Use symbols to represent variables in contextual situations.	**1**	Use variables in contextual situations.

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Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
3. Algebraic Representations	3	Create and solve equations with one variable for addition and subtraction of whole numbers; create and solve equations with one variable for multiplication and division facts.	2	Solve equations with one variable using missing addends to sums of 18 (e.g., □ + 9 = 18, 9 + □ = 18); and using minuend through 18 (e.g., 18 - □ = 9, 18 - 9 = □).
4. Analysis of Change		**REMOVED**	1	Identify the change in a variable over time (e.g., an object gets taller, colder, heavier)
		REMOVED	2	Make simple predictions based on a variable (e.g., increases in allowance as you get older).

Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Geometric Properties	1	Identify and describe 3-dimensional figures including their relationship to real world objects: • sphere, • cube, • cone, • cylinder, and • rectangular prisms	2	Name concrete objects and pictures of 3-dimensional solids (cones, spheres, and cubes).

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Geometric Properties	2	Relate the shapes of the faces of 3-dimensional figures to 2-dimensional figures: • vertices/corners and • edges/sides.	3	Describe relationships between 2-dimensional and 3-dimensional objects (squares/cubes, circles/spheres, triangles/cones).
	3	Describe patterns of geometric figures created by increasing the number of sides.*		
	4	Recognize similar figures.	4	Recognize similar shapes.
		REMOVED	1	Build geometric figures with other common shapes (e.g., tangrams, pattern blocks, geoboards).
	M03-S4C2-01	**Moved to Strand 4 Concept 3**	5	Identify a line of symmetry in a 2-dimensional shape.
2. Transformation of Shapes	1	Identify and justify all lines of symmetry, if any, in a 2-dimensional shape.	S4C2-05	Identify a line of symmetry in a 2-dimensional shape.
	2	Identify and demonstrate translations (slides), reflections (flips), and rotations (turns) using geometric figures.	1	
3. Coordinate Geometry		**Removed**	1	Identify points in the first quadrant of a grid using ordered pairs.

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
4. Measurement	1	Apply measurement skills to measure length, weight, and capacity using metric and U.S. customary units: • select the appropriate unit of measure (yd, pint, gallon, cm, m, mL, L, g, kg), • select the appropriate tool, and • estimate, measure, and compare estimate to actual measure.	1	Select the appropriate measure of accuracy: • length – centimeters, meters, kilometers, • capacity/volume – liters, and • mass/weight – grams.
			4	Measure a given object using the appropriate unit of measure: • length – centimeters, millimeters, meters, kilometers, • capacity/volume – liters, and • mass/weight – grams.
	2	Determine elapsed time: • across months using a calendar and • by hours and half hours using a clock.	3	Determine the passage of time across months (units of days, weeks, months) using a calendar.
	3	Read temperatures on a thermometer in metric and U.S. customary units.	5	Record temperatures to the nearest degree in degrees Fahrenheit and degrees Celsius as shown on a thermometer.

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
4. Measurement	4	Determine equivalent relationships for units of length, weight, and capacity: • centimeters to meters, • inches or feet to yards, • grams to kilograms, • ounces to pounds, • milliliters to liters, and • cups to pints, pints to quarts, quarts to gallons.	6	Compare units of measure to determine more or less relationships for: • length – inches to feet; centimeters to meters, • time – minutes to hours; hours to days; days to weeks; months to years, and • money – pennies, nickels, dimes, quarters, and dollars.
			7	Determine relationships for: • volume – cups and gallons, • weight – ounces and pounds, and • money – extend to amounts greater than one dollar.
	5	Determine the area of a rectangular shape using an array model.	10	Represent area using a rectangular array.
	M02-S4C4-02	**Moved to Grade 2**	2	Tell time with one-minute precision (analog).
		REMOVED	8	Compare the length of two objects using U.S. customary or metric units.
		REMOVED	9	Determine the perimeter using a rectangular array.

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Strand 5: Structure and Logic				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Algorithms and Algorithmic Thinking	1	Discriminate necessary information from unnecessary information in a given word problem.	1	Discriminate necessary information from unnecessary information in a given grade-level appropriate word problem.
2. Logic, Reasoning, Arguments, and Mathematical Proof	1	Develop the problem-solving strategy of looking for a pattern.*		
	2	Solve a non-routine problem by selecting and using a strategy.*		
	3	Create written word problems using addition, subtraction, multiplication, or division.*		
		REMOVED	1	Draw conclusions based on existing information (e.g., All students in Ms. Dean's 1st grade class are less than 7 years old. Rafael is in Ms. Dean's class. Conclusion: Rafael is less than 7 years old.).

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